ICT Governance and Blueprint for Credit Unions Coordinating Agency In Indonesia

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Abstract

Credit union as one of the non-bank financial institutions has begun to adapt and implement ICT to initiate the purchase of computers in early 1990 and use Credit Union Core Information System since in 1995. Information system has been developed at the time there is a particular need and without prior planning. This kind of development led to not integrated existing information systems, resulting in overlapping or intersection of interest and floating between ICT activities program. Hence the BKCU Kalimantan as an institution that coordinate Credit Unions need to take the necessary steps to make ICT master plan that can be used as a guide in structuring, development, implementation and ICT services now and the future. Development of a blueprint and ICT governance is the foundation for the development of environmental information system in Kalimantan BKCU for integrated, efficient, transparent and accountable.

Referring to the policies and long-term plan BKCU Kalimantan (2010), Blue print contains BKCU Kalimantan ICT strategic plan to implement information systems, in which contains the guidelines required information system needs. Blueprints have been prepared as a tool to assist in coordinating CU and DO with BKCU Kalimantan and translate operational needs into system requirements and technology. The main function of ICT BKCU Kalimantan is to build ICT-based management information system by providing a variety of savings and loan services and supporting ICT-based integrated within the scope of Borneo BKCU community consisting of DO, CU, TP, members of primary cooperatives, managers and employees.

At the end of 2015, the development of the planned system will produce an integrated system to support operations and management carried out both in BKCU Kalimantan and in the CU. Kalimantan BKCU connected via a link DO CU and CU connected with TP. To support the internal activities in BKCU Kalimantan connected in intranet networks, as well as the CU and TP. Collector connect with the TP via the mobile network.

1 Introduction

The development of information and communication technology has revolutionized the way human life both in terms of communication, work, learn, do business and socialize. The progress of information and communication technology has opened up new opportunities that enable industry and financial institutions operate through boundaries. The role of information and communication technologies will further increase as the development of time and until it became the basic element in the industry such as financial institutions. Advances in technology are providing a sense of optimism on the benefits of information and communications technology for improved performance in an industry, including cooperatives and banks. Information technology especially the Internet has allowed all industries and business organizations become players in the global level.

OECD defines the Information and Communications Technology, hereinafter referred to as ICT, as a series of activities that facilitated electronic equipment that includes processing, transmission, and presentation of information. ICT is the convergence of three areas, namely information technology, data and information, and socioeconomic issues. So speaking of ICT is not only limited to the technology itself, but also should review and consider the impact of these technologies. In other words, the mastery and application of ICT in general along with the various positive and negative impacts caused.

Credit union as one of the non-bank financial

institutions begin to adapt and implement ICT to initiate the purchase of computers in early 1990 and use of information systems information systems Credit Union Core Information System (CUCIS) in 1995. Later in the year 2004 using information systems Credit Operating System (SIKOPDIT) and Savings Credit Cooperative information systems (SIKODIT) in 2009. Information system development done at the time there is a particular need and without prior planning. This kind of development led to not integrated existing information systems, resulting in overlapping or intersection of interest and floating between ICT activities program. Hence the BKCU Kalimantan as an institution that coordinate Credit Unions need to take the necessary steps to make ICT master plan that can be used as a guide in structuring, development, implementation and ICT services now and the future. Development of a blueprint and ICT governance is the foundation for the development of environmental information system in Kalimantan BKCU for integrated, efficient, transparent and accountable.

2 Theoretical Background

Selig [Selig, 2006] stated that the purpose of IT Governance is to: Align IT investments and priorities more closely with the business; Manage, evaluate, prioritize, fund, measure and monitor requests for IT services and the resulting work and deliverables, in a more consistent and repeatable manner that optimizes returns to the business; Manage the responsible utilization of resources and assets; Ensure that IT delivers on its plans, budgets and commitments; Establish and clarify accountability and decision rights (clearly define roles and authority); Manage risks, change and contingency proactively; Improve IT organizational performance, compliance, maturity and staff development; Improve customer service and overall responsiveness.

The Control Objectives for Information and related Technology (COBIT®), provides a comprehensive framework for the management and delivery of high-quality information technology-based services by bridging the gap between business risks, control needs and technical issues. The framework offers a set of control objectives in four IT Process Domains: Planning and Organization; Acquisition and Implementation; Delivery and Support, and Monitoring and Evaluation, as figure 1below.

ICT blueprint is a short-term planning and long-term planning in the development of information systems that translate the good wishes of members, board, management and users as well as changes that occur inside and outside the organization. The purpose of this document is the development blueprint as a guide in providing direction for structuring, planning, implementation and development.

According to Borzekowski and Cohen

Figure 1: Four IT Process Domains

[Borzekowski and Cohen, 2005], Information technology is crucial in the operation of credit unions, as it is throughout the financial services industry. The central role of information technology in the operation of financial services firms is often credited with fostering the increasing dominance of larger financial institutions most able to capture the increasing returns to scale inherent in the technology. The same information and communication technologies that may aid consolidation may also foster the existence of smaller financial services firms and to the evolution of an industry that specializes in providing IT services to financial institutions.

Dow [Dow, 2006] argued that It finds that larger credit unions are more likely to adopt new technologies, are more likely to adopt earlier, and are more likely to offer more advanced versions of the technology. There is also some evidence that credit unions that provide web access also tend to offer interest rate spreads that are less beneficial for their members. It suggests that the increase in credit union size is likely to result in an increase in the adoption of new technologies.

Referring to the policies and long-term plan BKCU Kalimantan (2010), Blue print contains BKCU Kalimantan ICT strategic plan to implement information systems, in which contains the guidelines required information system needs. Blueprints have been prepared as a tool to assist in coordinating CU BKCU Kalimantan and DO with BKCU Kalimantan and translate operational needs into system requirements and technology. The main function of ICT BKCU Kalimantan is to build ICT-based management information system by providing a variety of savings and loan services and supporting ICT-based integrated within the scope of BKCU Kalimantan community consisting of DO, CU, TP, members of primary cooperatives, managers and employees. In practice, this system support the principal duties and functions as a "coordinator TP, CU, DO, and support the need for management information systems at BKCU Kalimantan up to the TP.

ICT development blueprint is also designed to facilitate in monitoring the extent to which the system is built and implemented. ICT development program is designed, developed and implemented

in order to provide maximum benefit for all parties, especially communities of BKCU Kalimantan start of DO, CU until TP. The expected benefits of ICT development program BKCU Kalimantan are:

1. ICT as a tool in decision making that is very accurate, fast, accurate and reliable in meeting members.
2. ICT provides ease in interacting and communicating with all communities BKCU Kalimantan.
3. ICT as a means to an administrative job that provides efficiency and high productivity.
4. Be the basis for planning and implementation of ICT investment.
5. ICTs can improve the capability and competence of members, trustees and management that are directly or indirectly to increase the value added to BKCU Kalimantan.
6. Reduce the various risks that may arise in its implementation such as:
   (a) The discrepancy between the needs of users with the information system built
   (b) Many applications are patched, so it cannot communicate with each other
   (c) Investments issued not benefit as expected
   (d) Standard quality information system should not in accordance with industry standards
7. Become a tool of effective controls and parameters for assessing the performance and successful implementation of ICT

3 Methodology

ICT development blueprint using several approaches, namely a SWOT analysis for the evaluation of internal and external environment, and the COBIT framework as the basic structure of the ICT blueprint for systematic document BKCU Kalimantan. This research is also equipped with a survey or field observation, especially for computer mapping and data communications networks as well as application portfolio inventory that is used in several credit unions in the region of West Kalimantan. Stages of ICT development in general blue is as follows:

1. Identify the vision, mission and policies BKCU Kalimantan, including strategic planning or official document that describes the development direction BKCU and credit unions in Kalimantan,
2. Evaluation of the external environment by adopted SWOT analysis, although it is Qualitative Descriptive covering actual issues related to the function and role of credit unions in the era of regional autonomy and the information age,
3. Evaluation of internal conditions which include evaluation of computer network infrastructure, application portfolio, and other technical aspects, and
4. development plan for short-term and long-term ICT development and its determination of performance indicators and a variety of procedures and standards to be followed in the development of information systems in BKCU Kalimantan.

4 Result And Discussion

4.1 Evaluation of External Environment—

Indonesia is covering an area of 1,904,556 km2 that consist of 17 504 islands, of which 9634 have not been given a name (Ministry of Home Affairs, 2004). Regional government includes 33 provinces, 349 County Government, 91 city governments, 5263 districts, 7123 villages, and 62,806 villages (Permendagri No. 18 of 2005). Indeed, is not available a complete and detailed data about how many regions the number of level I, II, III, and even the village or villages that intensive use of information technology. The population also includes four major world as many as 238,452,952. The fact of demographic and geographic characteristic becomes a potential challenge in this era of globalization and information. Especially how to connect parts of Indonesia through which information technology is a type of technology that drives globalization.

The island of Kalimantan has a uniqueness that is not owned by the other major islands in Indonesia. Besides having a myriad of natural resource wealth, there is also the island state of Malaysia and Brunei Darussalam. Kalimantan region is divided into 4 provinces namely West Kalimantan, Central Kalimantan, South Kalimantan and East Kalimantan. Based on data from BPS (Inter-Census Population Survey, 2005), the population numbered 12,098,036 inhabitants. West Kalimantan Province is a province with a population most of which, ie 4,052,345 inhabitants.

Empowerment of micro in Indonesia is one of the strategic policy alternatives because it involves the lives of many people, especially associated with the direction of economic policy-oriented economic populist and development of micro, small and medium enterprises. One program or as a

Table 1: Population and Area of Kalimantan

Provinces	Total Population	Total Area (Km²)
West Kalimantan	4.052.345	120.114,32
Central Kalimantan	1.914.900	153.564,50
South Kalimantan	3.281.993	37.530,52
East Kalimantan	2.848.798	194.849,08
TOTAL	**12.098.036**	**506.058,42**

government policy and funding agencies who provide support for the provision of credit or financing to small businesses or the poor, known as microfinance or according to the terms in banking circles, also known as micro credit. Micro business loans are loans given to micro-enterprise clients, directly or indirectly, owned and run by the poor or near poor with poor criteria according to Bank Indonesia with a maximum credit limit of Rp.50,000,000.00 (fifty million rupiah).

Development and application of information and communication technology for empowerment of various organizations and institutions in the region depends on the role and contribution of local government. Role of which is through the provision of infrastructure or data telecommunications infrastructure, including stable electricity supply. With a policy of regional autonomy and financial decentralization, the roles associated with infrastructure development should be one priority of development in the area. But the program was relatively easy to implement. Several challenges and obstacles that may still faced by government and communities in the region are as follows.

First, the problem of knowledge and skills of information technology use by human resources in government agencies or public using a relatively low associated with socialization and training regarding the function and role of information technology as a tool or supporting media in carrying out the functions and duties of government. Effective training is still needed training need analysis stage, including the projected development of human resources in local government. These two things are necessary for the socialization and training of information technology in accordance with the purposes and policy development at the local government itself. Improved human resource capacity needed to support the sustainability of the management of ICT facilities.

Second, the low level of ICT penetration and the digital gap (digital divide) in community groups is a factor inhibiting the use of ICT in the region for the benefit of society. In addition, the availability of access or internet connection in the area of governance, including perceptions of high cost of Internet connection be another inhibiting factor. One effort that can be done in the early stages is the formation of public awareness or concern about the functions and benefits of ICT. This effort can be done through public education about the function and role of ICT, including introducing the concept of e-government. Awareness formation is an early stage in the process of adoption of information technology that is expected to affect the decision of the community in using ICT-based public services provided by local government.

Thirdly, training functions and benefits of ICT must be balanced with the enrichment of information (information Richness) of public or community service by the local government that can meet the needs and conditions of the community. Training also requires commitment and support sustainable local government policies, including the revamping of public information facilities. The need for public information itself will evolve and eventually the estuary is a government service demands increase. The diversity of educational levels and social strata of society-that in addition to encouraging the digital divide, also demanded that the public education system or method is effective. Differences scope and depth of educational materials should be considered when designing the syllabus and education media. Various types of training or media-such as conventional training schedule, distributing brochures, colloquium on specific target groups, computer-based instructional media, to the model of e-learning, need to be developed and implemented in accordance with the characteristic of the target communities.

In relation to regional autonomy, as stipulated in the Act No.22 of 1999 on regional government and Law No.25 of 1999 on financial balance between central and local governments, regional development is one of a series of basic success of national development aims to improve living standards and welfare. Implementation of development effectively and efficiently will make the achievement of local independence is also directed to a real implementation of regional autonomy and responsibility. The consequences of the implementation of both laws is that government must be able to develop a broad regional autonomy, real and responsible within the framework of community empowerment, economic institutions, political institutions, legal institutions, religious institutions, and nongovernmental organizations as well as all the potential people within the Unitary State Republic of Indonesia.

4.2 The Internal Factor Evaluation

4.2.1 Computer Networking and Data Communication

A credit union (CU) may have a structure of offices and places of service vary, although in principle have the same function. Structural difference is only intended to facilitate coordination, especially with service venues (TP), which many in number, as well as to facilitate members in terms of access to the TP-TP. CU offices are located across many locations to reach members who are up in the countryside. These conditions have the consequence of inter-office connectivity that must be well maintained, particularly with respect to system integration. However, the current system used in each credit union office is not integrated with one another. The process of updating (updating) data in a batch of transactions carried out by a certain time period, so that transaction data changes that occur in the TP-TP cannot be viewed in real time on CU's headquarters. Updating of data in batch form is also done in a variety of credit union with one another. There CUs updating the data transmission by making transactions through e-mail, fax and those that carried out physically by sending physical evidence of transactions of the headquarters as illustrated in Figure 2 below.

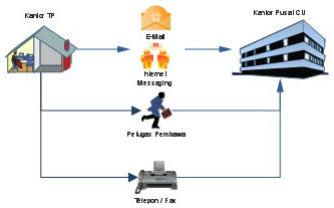

Figure 2: CUs update data transmission

In addition, there is no standardization of data formats within the application used in TP, so it requires an adjustment / conversion of data to be read by an application at the headquarters. Application used by each CU is still diverse. There CUs that use credit cooperative information systems (SIKOPDIT) developed by Inkopdit, some use credit union core information system (CUCIS) and some use CU Smart for their operational activities. The level of technology implementation in each CU is also quite diverse. In fact there are CUs that have implemented automated teller machine (ATM) using local switching, as illustrated in Figure 3 below:

Utilization of the engine electronic data capture (EDC) for the field collector and application of interactive SMS is also in the testing stage. However, most of the CU has used the LAN that is equal to 32.6%.

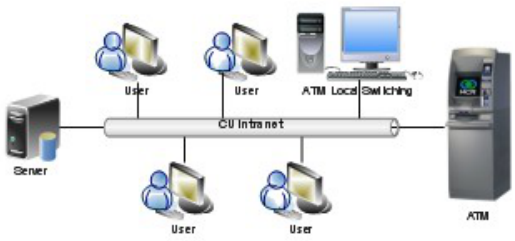

Figure 3: CUs ATM using local switching

4.2.2 Infrastructure Evaluation

In the normal maintenance of computer networks BKCU Kalimantan, CU and TP can not be separated from the constraints both technical and non technical nature and constraints of natural disturbances that sometimes occur. CU infrastructure conditions vary. Most of the operational area CU already has a network of electricity, but there are few people that have not. PLN electricity network conditions cannot fully support the activities BKCU Kalimantan and CU and TP because every day for several hours' unstable electricity is occurred. Therefore BKCU Borneo and most of the CU have a generator just a small part of CU that has no generator. In addition to the above conditions, communication by using a cable telephone network also has not touched all areas of CU operations. Communication is mostly done by using a mobile phone network. The signal is good and accepted by virtually all operational areas of CU and TP is the signal from the provider Telkomsel and Indosat.

4.2.3 Evaluation of Information Systems and Applications Portfolio

Judging from the use of ICTs, from 46 CUs have made use of ICT as much as 35 CU or equal to 76.1% while the 6 CU or 23.9% is still manual. Of the 35 CUs that have made use of ICT, 28 CU or equal to 80% using Sikopdit, 3 CU or by 5.8% in progress Sikopdit, 4 CU or 11.4% using Cucis and 1 CU by 2.8% using Smart CU . In addition to the above information system, to run a good organization and management functions such as finance, administration, human resource management did not use the information system but still carried out using Microsoft office as a tool. This condition occurs either in BKCU Kalimantan, DO, CU and TP. Operating System Credit Information System (Sikopdit) and Savings Credit Cooperatives (Sikodit) is issued by system applications Inkopdit and constructed by external parties. In its implementation, technical support from Inkopdit in connection with the operation of application systems are needed but cannot be met. In case of problems on the system, will be a matter of protracted and difficult to measure the time of completion. In terms of system development, there is no clear procedure to convey con-

cepts and ideas development to developers. In the end, these conditions can hamper business process DO, CU, TP as a whole.

4.3 Principles and Good Practices in IT Governance BKCU Kalimantan

Corporate governance of information technology (IT-Governance) is one part of corporate governance or organization (corporate governance) are increasingly important in the information age and globalization today. Good corporate governance is a set of processes, policies, regulations, management practices, and institutions that affect how an entity (company, organization, and other institutional type) are controlled and managed. Governance is to unite all the relationships between stakeholders of an organization or company concerned and assist management to achieve goals. Strategy effective organizational governance will help an organization to manage all aspects of the organization in achieving organizational goals. One aspect of information technology-is growing rapidly and have an impact on aspects of community life. So the governance of information technology is an integral part of the aspects or functions of the organization as a whole. Illustration of the integration process of the governance of information technology into the organizational functions of BKCU Kalimantan by adopting the COBIT framework (Control Objectives for Information and related Technology) can be seen in figure 4 below.

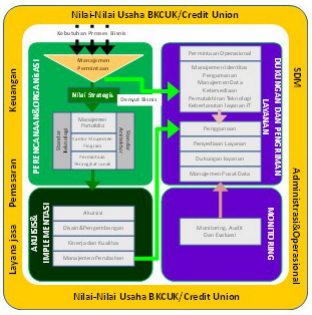

Figure 4: COBIT framework

Corporate governance of information technology is a term or concept that describes how people who believed in the management of the organization will consider or take advantage of information technology in the process of supervision, monitoring, control and direction of the organization. Information technology governance focused on information technology systems, performance, and risk management from the application of information technology in an organization. The main purpose of the information technology governance is to ensure that investment in information technology to create business value and to mitigate risks associated with information technology. Good corporate governance can be done by implementing an organizational structure with clearly defined roles and responsibilities effectively in terms of information, business processes, applications, and infrastructure. The strategy or governance of information technology must be aligned with the strategy BKCU Kalimantan. BKCU kalimantan has developed the concept of ICT governance, such as: (a) organization or ICT managers and task description, (b) Centralized and Decentralized Policy Systems, (c) Procedure Development and Implementation of Systems, (d) Training Program, Social Systems, and Code Ethics of Use, and (e) Management of ICT Risk and Disaster & Recovery Planning.

4.4 Infrastructure Development and Future of Information Systems

The plan of development or management of computer network infrastructure and data communications for the period 2010-2015 connected in an internal network can be seen in the picture 5below.

Figure 5: BKCU network infrastructure plan

Kalimantan BKCU connected via a link DO CU and CU connected with TP. To support the internal activities in BKCU Kalimantan connected in intranet networks, as well as the CU and TP. Collector connect with the TP via the mobile network. For DO network configuration can be seen in Figure6 below.

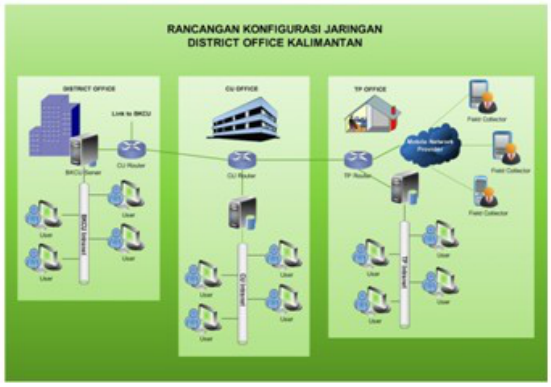

Figure 6: Kalimantan District Office network infrastructure plan

At the end of 2015, the development of the planned system will produce an integrated system to support operations and management carried out both in BKCU Borneo and in the CU. The integration system can be seen in figure7 below

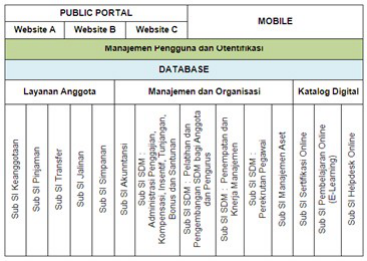

Figure 7: BKCU Integration System

5 Conclusion

A credit union (CU) may have a structure of offices and places of service varies, although in principle have the same function. Structural difference is only intended to facilitate coordination, especially with service venues (TP), which many in number, as well as to facilitate members in terms of access to the TP-TP. CU offices are located across many locations to reach members who are up in the countryside. These conditions have the consequence of inter-office connectivity that must be well maintained, particularly with respect to system integration.

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